

**REMARKS**

**Status of the claims:**

With the above amendments, claims 3 and 6 have been canceled and claims 1, 2, and 5 have been amended. Claims 1, 2, 4, and 5 are pending and ready for further action on the merits. No new matter has been added by way of the above amendments. Claims 1 and 2 have been amended by the incorporation of one of the members of the Markush group from claim 3.

Because the Examiner has indicated in the Advisory Action of June 18, 2004 that the amendments would only be entered in the event of appeal, Applicants again present the same claim amendments that were presented in the response that was filed June 7, 2004. Reconsideration is respectfully requested in light of the following remarks.

**Title Change:**

Please note that the title has been changed from "Rubber Composition for Type Tread" to "Rubber Composition for **Tire** Tread".

**Rejections under 35 USC §103**

Claims 1-6 are rejected under 35 USC §103(a) as being unpatentable over Scholl '226 (US Patent No. 5,663,226).

Claims 1-6 are rejected under 35 USC §103(a) as being unpatentable over Wolff '336 (US Patent No. 4,517,336).

Claims 1-6 are rejected under 35 USC §103(a) as being unpatentable over Scholl '415 (US Patent No. 6,025,415).

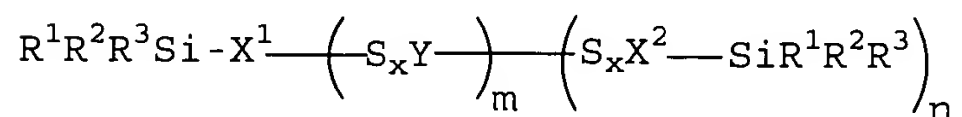
Applicants traverse.

### Present Invention

The present invention as recited in claim 1, relates to a tire tread having a rubber composition. The rubber composition comprises (a) a diene rubber, (b) glass fibers, (c) a reinforcing agent, and 1 to 15 parts by weight of (d-1) aluminum hydroxide softer than the glass fibers and having an average particle-size of less than 25  $\mu\text{m}$  and/or (d-2) silicone rubber powders based on 100 parts by weight of the diene rubber.

### Disclosure of Scholl '226

Scholl '226 discloses rubber mixtures containing at least one vulcanising agent, a filler, optionally other rubber additives and at least one reinforcing additive of the formula



are used for the preparation of vulcanized rubbers. The tires made from this composition are said to have low rolling

resistance combined with a good wet skid resistance and a high abrasion resistance.

**Disclosure of Wolff '336**

Wolff '336 discloses moldable and vulcanizable rubber mixtures that are made from a rubber (A) which still contains double bonds and which is cross-linkable by means of sulfur and a vulcanization accelerator or a mixture of rubber (A) with a different rubber (B), 0.2 to 10 parts of sulfur, 0.2 to 10 parts of a vulcanization accelerator and 1.0 to 10 parts of a bis-(alkoxysilylalkyl)polysulfide. There can also be present a silicate filler and/or a carbon black filler of rubber.

**Disclosure of Scholl '415**

Scholl '415 discloses mixtures of oxidic and/or siliceous fillers and rubbers that are produced by adding at least one water-repellent oxidic and/or siliceous filler to the solution of a rubber in an organic solvent in quantities from 0.5 to 300 parts by weight, based on 100 parts by weight of rubber, wherein the solution of the rubber may contain other auxiliary agents for working up, processing and stabilizing as well as additional fillers. The solvent is subsequently removed by steam distillation at temperatures from 50 to 200°C.

Removal of the Rejection over Scholl '226 and Wolff '336 and Scholl '415

In the Advisory Action of June 18, 2004, the Examiner on page 3 has said:

*The applicants in their discussion also give weight to the aluminum hydroxide having particle size of less than 25 microns, which feature is not part of the claims.*

Applicants, herein, reproduce claim 1 as was filed in the reply of June 7, 2004.

1. (currently amended) A tire tread having a rubber composition, wherein said rubber composition comprises (a) a diene rubber, (b) glass fibers, (c) a reinforcing agent, and 1 to 15 parts by weight of (d-1) ~~inorganic powders~~ **aluminum hydroxide softer than the glass fibers and having an average particle-size of less than 25  $\mu$ m** and/or (d-2) silicone rubber powders based on 100 parts by weight of the diene rubber. (emphasis added)

From the above claim 1, it should be apparent that the aluminum hydroxide having an average particle-size of less than 25  $\mu$ m is part of the claims. As was mentioned in the response filed June 7, 2004, this feature is neither disclosed nor suggested by Scholl '415. Moreover, this feature is neither disclosed or suggested by Scholl '226 nor Wolff '336. Accordingly, for this reason alone, the rejections over Scholl '415, Scholl '226, and Wolff '336 are inapposite.

Further, an important feature of the present invention is that both "aluminum hydroxide having an average particle size of less than 25  $\mu$ m" and "glass fibers" are contained in the rubber

composition. As is described at page 22, lines 16 to 20 of the instant written description, performance on ice and snow and abrasion resistance can only be improved, while maintaining dispersibility of the reinforcing agent, only when both of the above components are present. The Examiner's attention is directed to Comparative Examples 1 and 2 of Table 1 of the present written description wherein it is shown that abrasion resistance and the degree of dispersion of carbon black decrease when only the glass fibers are compounded. The Examiner should note that the properties of the rubber composition of Example 1, which is the same rubber composition as Comparative Example 2 except that HIGHLIGHT H43 (average particle size = 0.6  $\mu\text{m}$ ) is added, are improved in performance on ice as well as in abrasion resistance while maintaining the degree of dispersion of carbon black. This should be compared to the properties of the rubber composition of Comparative Example 1, which shows poorer performance on ice. The Examiner should note that this should lead one of ordinary skill in the art to realize that the desired properties can only be attained when the "aluminum hydroxide having an average particle size of less than 25  $\mu\text{m}$ " and the "glass fibers" are contained in the rubber composition. Thus, even if a proper *prima facie* obviousness rejection were presented (which Applicants do not concede), the instant invention possesses unexpectedly superior properties that could

never be surmised by any of the cited references. For this reason also, withdrawal of the rejections are warranted and respectfully requested.

Moreover, as was pointed out in the response of June 7, 2004, instant claim 1 has been amended to more particularly recite aluminum hydroxide instead of inorganic powders. Neither Scholl '226 nor Wolff '336 disclose or suggest aluminum hydroxide. Thus, Applicants assert that the Examiner has failed to make out a *prima facie* case of obviousness with regard to the 35 USC §103(a) rejection over Scholl '226 or Wolff '336. Three criteria must be met to make out a *prima facie* case of obviousness.

- 1) There must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.
- 2) There must be a reasonable expectation of success.
- 3) The prior art reference (or references when combined) must teach or suggest all the claim limitations.

See MPEP §2142 and *In re Vaeck*, 20 USPQ2d 1438 (Fed. Cir. 1991).

In particular, the Examiner has failed to meet the third element to make a *prima facie* obviousness rejection. Neither Scholl '226 nor Wolff '336 discloses aluminum hydroxide. For this reason alone, the rejections over Scholl '226 and Wolff '336 are

obviated. Withdrawal of the rejections is warranted and respectfully requested.

Further, as was pointed out in the response of June 7, 2004, in Scholl '415, aluminum hydroxide is mentioned as one of many possible siliceous fillers. Applicants draw the Examiner's attention to Example 1, Comparative Example 2 and Comparative Example 3 in the instant written description.

The composition of Comparative Example 2, in which a diene rubber, glass fiber and carbon black (which is used as the reinforcing agent) are compounded, the composition exhibits low dispersability of carbon black and low abrasion resistance. Please note that these components are all elements of the presently claimed invention. By compounding aluminum hydroxide to the composition of Comparative Example 2 within the range of 1 to 15 parts by weight based on 100 parts by weight diene rubber (Comparative Example 3), the dispersability of carbon black can be improved. Furthermore, if the aluminum hydroxide has average particle size of less than 25  $\mu\text{m}$  (see Example 1), both the dispersability of carbon black and abrasion resistance can be improved. These are features that are neither disclosed nor suggested by Scholl '415.

From the above description, it should be apparent to one of ordinary skill in the art that by satisfying the element of 1 to 15 parts by weight of aluminum hydroxide, which is softer than

the glass fibers and has average particle size of less than 25  $\mu\text{m}$ , based on 100 parts by weight of the diene rubber) with the other elements of the present invention, (i.e., a diene rubber, glass fibers and reinforcing agent), a tire tread can be provided wherein the dispersability of the reinforcing agent is maintained without increasing rubber hardness. This results in a superior tire that has improved performance on ice and abrasion resistance.

From the above, it should be apparent to those of ordinary skill in the art that one could never arrive at the instant invention from the disclosure of Scholl '425 because Scholl '415 fails to recognize the unexpectedly advantageous results that can be obtained by using the rubber composition as claimed in, for example, claim 1. For this reason, the rejection over Scholl '415 is inapposite. Withdrawal of the rejection is warranted and respectfully requested.

With the above remarks and amendments, Applicants believe that all rejections have been obviated and that the claims, as they now stand, define patentable subject matter such that passage of the instant invention to allowance is warranted. A Notice to that effect is earnestly solicited.

If any questions remain regarding the above matters, please contact Applicant's representative, T. Benjamin Schroeder (Reg.




No. 50,990), in the Washington metropolitan area at the phone number listed below.

Pursuant to the provisions of 37 C.F.R. §§ 1.17 and 1.136(a), Applicants respectfully petition for one (1) month extension of time for filing a response in connection with the present application. The required fee of \$110.00 is attached hereto.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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